TITLE OF THE INVENTION

Educational Device

CROSS-REFERENCE TO RELATED APPLICATIONS

Not applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC

Not applicable

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates generally to electronic educational devices, and more particularly to an audio-visual learning device for teaching small children by association of an object such as a musical instrument or an animal which produces a distinctive sound with the viewable indicia associated therewith and description thereof.

Description of Related Art

The availability and relative low cost of electronic education and training devices and systems have had a great influence upon educating people, particularly younger children. By the inclusion of inexpensive yet extremely powerful CPUs, audio synthesizers and the like which may both control system operation and selective synthesized audible words, music and sounds, the scope of these educational and entertainment devices for children, even for families with modest means, has greatly increased.

Examples of such electronic educational and entertainment toys and devices are disclosed in the following U.S. patents.

U.S. Patent No. 4,280,809 to Greenberg, et al.

U.S. Patent No. 4,482,329 to Shindo

U.S. Patent No. 4,997,374 to Simone

U.S. Patent No. 5,413,355 to Gonzalez

U.S. Patent No. 5,478,240 to Cogliano

U.S. Patent No. 5,595,489 to Kwon

U.S. Patent No. 5,944,533 to Wood

U.S. Patent No. 6,109,925 to Druckman, et al.

U.S. Patent No. 6,264,523 to Simmons

However, none of these prior art disclosures appear to capture the powerful educational tool of teaching a child to be directed to a viewable indicia representative of an object by directing the child's visual attention toward distinctive synthesized sound produced by the object which emanates from that viewable indicia. This educational technique of the present invention draws the attention of listening and eyesight of the child to viewable indicia in the form of either a graphic display of an object and/or the word describing the object itself by a sound which synthesizes that which is typically associated with the object itself. For example, if one of the objects displayed graphically on the invention is a cow, a graphic display of a cow will be presented at one location on the device immediately adjacent to which the word "cow" appears in large letters. When the child or attendant selects that viewable indicia by manual activation, the sound emitted by a cow, e.g. "moooooooooo" will emanate from a sound emitting area

immediately adjacent or in very close proximity to the viewable indicia itself such that the eye and listening attention of the child is directed to and focused on the viewable indicia by the sound which emanates therefrom.

BRIEF SUMMARY OF THE INVENTION

This invention is directed to an audio-visual educational device including a housing including a plurality of separate viewable indicia each representative of an object which produces a distinctive audible sound associated with the corresponding object. A sound emitting area is also provided in the housing in close proximity to each object. An electronic controller operably mounted in the housing selectively produces and emits or causes to be emitted through an audio output device each of the distinctive audible sounds from the corresponding sound emitting area responsive to manual selection of one viewable indicia. The user then receives an audible queue in the form of the audible sound to look in the direction of sound emanating from the corresponding sound emitting area thereby learning to associate the selected viewable object with its corresponding audible sound.

It is therefore an object of this invention to provide an educational toy or device for children which utilizes an audio-visual technique of drawing and focusing the attention of the child to a selected viewable indicia of an object by the characteristic sound of the object and emitting the sound from a point immediately adjacent to the viewable indicia.

Still another object of this invention is to provide an educational audio-visual toy for children which incorporates sound direction to draw the attention of the child to a particular location on the device and, in doing so, to cause the child to look directly at

viewable indicia or representation of the object which produces the characteristic sound which emanates from that same portion of the device.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

Figure 1 is a front elevation view of one embodiment of the invention.

Figure 2 is a side elevation view of Figure 2.

Figure 3 is a rear elevation view of the invention as shown in Figure 1 with the rear half of the housing removed.

Figure 4 is an enlarged view of the central pivotal portion of the arm assembly of Figure 3.

Figure 5 is a front elevation view of the embodiment shown in Figure 1 with the front panel removed.

Figure 6 is an enlarged view of the printed circuitry shown in Figure 5.

Figure 7 is a perspective view of another embodiment of the invention.

Figure 8 is a side elevation view of Figure 7.

Figure 9 is an enlarged broken view of one of the side surfaces of the invention shown in Figure 7.

Figure 10 is an enlarged view of another surface of the embodiment of the invention shown in Figure 7,

Figure 11 is a top plan view of a third embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, one embodiment of the invention is there shown generally at numeral **10** in Figures 1 to 6. This embodiment **10** includes a housing **12** having a molded plastic housing front half **18** and a mating molded plastic rear housing half **28**. The two housing halves **18** and **28** define a support base **14** at the bottom portion thereof supportable on a flat surface by bottom surface **14a** in Figure 3.

The outer obverse forwardly facing surface of the front half **18** as seen in Figure 1 includes a plurality of viewable indicia **26**, each of which depicts a different object such as a flute, a harp, a piano, a tuba, etc. which produces or is capable of producing a recognizable sound, in this case, musical sounds or notes. Immediately adjacent to each of the viewable object indicia **26** are written or printed words describing the corresponding viewable indicia. Also radially outwardly positioned immediately thereto is a sound emitting area **20** formed of spaced slots adjacent each of the viewable indicia **26**.

A rotatable selector **24** is also provided which is rotatable about a shaft **34** which defines central transverse axis of the housing **12** back and forth in the direction of arrow **A**. The child using the device or someone attendant thereto, would initially manually position the pointer **24** to be aimed at one of the selectable viewable indicia **26** for training or entertainment purposes. Thereafter, the central area **24a** is depressed to energize or activate the device **10** into operation.

Referring particularly to Figure 3, when the pointer **24** is rotated, arm assembly **30** which is also pivotally attached on shaft **34** to the pointer **24,** is also similarly rotated in the direction of arrow **A** in sequence therewith. Arm assembly **30** includes a sound producing device **36** connected at the distal end of arm member **32** which will emit synthesized

sounds representative of each of the selected, viewable indicia **26** displayed on the front housing **12**. Thus, when a selection is made by the manual rotation of the pointer **24** back and forth in the direction of arrow **A**, the sound emitting device **36** is positioned in alignment with and in close proximity to the inner surface of the corresponding sound emitting area **20**. A series of evenly spaced detents **44** act in alignment with a small protrusion (not shown) on the reverse surface of arm **32** to properly align the sound emitting device **36** to be in alignment with the corresponding sound emitting area **20** selected by pointer **24**.

An electronic controller **52** of conventional design is preprogrammed to produce electronic signals which, when received by the sound emitting device **36**, will produce separate synthesized sounds simulating each of the sounds normally associated with the object displayed in the viewable indicia **26** on the front surface of the front housing **18**. Powered by a storage battery **54**, the electronic controller **52** sends and receives signals by a wiring harness shown to and from a printed circuit board **50**. As best seen in Figure 6, this circuit board **50** includes a plurality of electrical contact surface pairs **56/58** and two spaced apart circle and ring-shaped contact pairs **60** and **62** centrally positioned on the circuit board **50**. Contact pads **56** and **58** are in operable engagement with contacts **40** and **42** on the opposing surface of arm **32** as best seen in Figure 4 while the circular and annular shaped contact **60** and **62** of circuit board **50** are in electrical contact against contacts **36** and **38** of the central portion of arm **32**. By this arrangement, the electronic controller **52** receives positional information with respect to pointer **24** and, when energized by manual depression of the central button **24a**, produces a signal which causes the sound emitting device **36** to emit a synthesized sound which is characteristic

of the selected object depicted in one of the viewable indicia selected by pointer **24**. This synthesized sound is emitted from the sound emitting device **36** in alignment with the corresponding sound emitting area **20** so that the child is directed to look at the particular sound emitting area **20** corresponding to the viewable indicia **26** which was preselected by the positioning of the pointer **24**. The learning function is thus enhanced by the child's focus of attention being drawn simultaneously to a graphic display of an object, the word description thereof, and the characteristic sound produced thereby.

By the use of this embodiment **10** of the device, when activated by depression of the central portion **24a** after the pointer **24** has been positioned to aim at the desired object depicted in one of the viewable indicia **26**, a corresponding sound will emanate from area **20** immediately adjacent thereto. When the child's gaze is focused on that portion of the front surface of housing half **18**, the educational connection will be made between the particular sound which emanates from the sound emitting area **20**, the graphic depiction of the selected object such as a piano, and the word "piano" immediately adjacent thereto. The attention drawn to these three representations of an object, the viewable indicia, including the printed description, the word describing the object, and the distinctive sound which the object emits provides a powerful educational tool for more rapidly establishing the connection association between the three symbols of the object itself.

Referring now to Figures 7 to 10, another embodiment of the invention is there shown generally at numeral **70** in the form of an educational cube. The housing **72** is formed of plastic material having softer exterior surfaces to reduce impact upon both

exterior objects and the battery-powered electronic controller (not shown) contained therein which functions as previously described.

This embodiment **70** includes depressible central areas **78**, **80**, **82**, **84** and **86**, oneon each of the generally flat surfaces of the cube-shaped housing **72**. Each of the central areas **78**, **80**, **82**, **84** and **86** include viewable indicia of a particular musical instrument, namely a French horn, a harp, a piano, etc. In addition, the viewable indicia includes the printed word(s) describing the object.

Formed into each of the central areas are arrays of apertures shown typically at **90** in Figure 9 which define a sound emitting area. As also seen in Figure 9, positioned behind each of these central areas (typically **84**) is a sound producing device **88** which will produce the corresponding synthesized sound of the object depicted on the central depressible area **84** associated with, or characteristic of, the viewable indicia depicted thereon.

By this arrangement, the child using this educational device **70** simply depresses one of the central portions **78**, **80**, **82**, **84** and **86** to activate the electronic controller (not shown) within the cube-shaped housing **72** which then produces a signal delivered to the particular sound emitting device **88** positioned behind the viewable indicia displayed on the depressed central portion. The sound emitted from the corresponding sound emitting area **90** will cause the child's attention to be directed to and focused there so that all of the indicia representative of the object, i.e. the pictorial depiction, the word description, and the characteristic sound emitted from the object are all in focus at one time for the child's associative educational growth.

Referring now to Figure 11, a third embodiment of the invention is there shown generally at numeral **100**. This embodiment **100** includes a housing **102** which supportively holds a series of side-by-side depressible keys **106** each of which includes a viewable indicia depicting an object shown typically at **108**, the word describing the object at **110**, and a sound emitting area **112** behind which is a sound emitting device (not shown).

When a particular key **106** is manually depressed, it activates the electronic controller (not shown) within the housing **102** to produce an electronic signal which will be delivered to the sound emitting device (not shown) behind the corresponding sound emitting area **112**. Again, the sound which is emitted from the particular sound emitting area **112** corresponds to the characteristic sound typically produced by the object depicted in the viewable indicia **108** and the word portion thereof at **110**.

While the instant invention has been shown and described herein in what are conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein, but is to be afforded the full scope of the claims so as to embrace any and all equivalent apparatus and articles.